The wonder of the Tower House lies in the balance of seeming contradictions within the one building. Writer Joan Gussow notes that it 'resembles the offspring of a Modernist skyscraper and a tree house.' And that is just the beginning. The vertical staircase, in the sunniest of yellows, is active and dynamic, and balances the calm of the horizontal living space floating 10 metres above ground level. High-tech windows and exterior walls, conceived and prefabricated in Europe, were assembled by local carpenters, guided every step of the way by the architects. In addition, the highly sculptural, mammal-like structure reflects, through use of olive-tinted fritted glass, its surroundings to the degree that it is hard to know where the building ends and its natural context begins.

The house, by New York practice GLUCK+, is a collaboration between Peter Gluck and his son Thomas. The younger Gluck was the major author of the design and, happily, the sometime occupant of this remarkable holiday house. "We all lead such frantic urban lives that the Tower House is a retreat," he says. "To be up in the trees with the view, to witness the changing weather patterns and the relationship of site to nature has a tremendous impact. The reaction of guests is visceral — it doesn't need explaining."

An aspect that was very well understood from the outset by the architects was the topography of this 16-hectare block of land in Upstate New York, two hours' drive from Manhattan. It's an area they have both known for many years — Thomas has been holidaying on the land since the age of two and, according to his father, 'while he is an urban guy as you can get, he also loves the country, hiking and backpacking'.

There are three other buildings on the site, the first of which, a tiny white clapboard farmhouse built in 1820, is where Peter Gluck and his wife stayed, in his words, 'started this whole thing'. The second dwelling is the Bridge House, which rethinkers the planning of a traditional holiday house with an emphasis on sleeping quarters for guests and large gatherings. It was hand-built by Thomas Gluck in 1996 before he set off for architecture school, giving him a much-needed understanding of building techniques. GLUCK+ is an architect-led design build office, so the emphasis on practical skills and building knowledge was essential. Thomas Gluck describes the character of the house itself as very different from that of the Tower House. 'It is a house with a strong relationship to the landscape: hunkered down, up against the cliff, feeling embedded and cool, with very little direct sunlight.'

The Bridge House is so named because it has a bridge starting from the top floor, apparently going nowhere but, in reality, ending at the base of the plateau upon which the Tower House is
built. “The bridge is there because I knew there was a wonderful site up there,” says Peter Gluck. “The bridge means you are already three storeys up – essentially halfway up the hill.”

The arrangement of the buildings, which includes the movingly simple Scholar’s Library (2003), is a unique program for this particular site and for the evolving Gluck family and their friends. Sensitivity to the landscape is clearly of great importance to the practice; the Tower House has the tiny footprint of 4.3 metres by 10 metres, which ensured minimum disruption to vegetation. It was crucial to determine the correct height for the building and, to this end, a temporary scaffold to the proposed top was erected beforehand. ‘Can you imagine building the whole thing and discovering you didn’t have a view?’ says Peter Gluck. The panorama over the mountains is exceptional, stretching more than 30 kilometres miles to the north.

The intention was always to find a balance between the functional and the creatively expressive within its natural context. ‘We didn’t think that moldering meant using natural, romantic, woody materials,’ says Peter Gluck. ‘This very strong powerful shape dissolves because of the reflectivity of the building. In all our work, we are very interested in a building’s movement and changes with time of day, or year, and in it becoming part of the environment.’

In terms of design, the planning is remarkably simple. The bedrooms, with adjacent bathrooms, are stacked one on top of each other with the kitchen positioned on top of the bathroom stack to ensure a central service core. The staircase is akin to a vertical corridor, with a glazed south-facing wall, open to the surrounding forest and the warming effects of the winter sun. GLUCK+ seeks to create buildings with ‘resolution in a way that makes aesthetic and experiential sense’, particularly in response to changes of weather, light and season. This stairway, animated through its graphic design and colour choice, combines the physical action of climbing with a shifting perspective as one starts at the trunks and rises to the treetops. ‘It is rare to have a multi-storey stairway exposed in this way,’ says Peter Gluck.

This activated, dynamic part of the building is cleverly counterbalanced by the serenity of the top storey castlemorton living space. This large horizontal room, painted almost entirely white, seems suspended in space. It is not overly detailed or decorated, rather allowing the views both near and far, managed through a continuous band of windows to the north and south, to become the focal point. ‘Because the floor is the same colour as the walls and ceiling, it does create this pure volume and adds to the feeling of floating in the trees,’ says Thomas Gluck. It is also simply furnished with streamlined built-in pieces, such as the window seat with storage underneath, running the length of the ribbon window. Even the colour of the padded seat cushion is a soft green, blurring the sense of inside and out. Design classics such as Saarinen’s Womb chair provides a blast of colour, and a pair of Hans Wegner’s CH07 chairs provide the curves in an otherwise rectilinear context.

The upward journey does not end in the living space but extends to a viewing platform, which takes on a different character from the precise geometry of the rest of the building – it is wooden, weathered and organic. That was the one place where wood seemed appropriate, as it is not visible from anywhere, and creates an experience rather like an eagle’s nest,” says Peter Gluck.

While the Tower House is a beautifully calibrated, artificial object in its forest setting, part of its appeal is found not in its visual presence, or the arrangement of space, but in the resolution of the practical issue of energy use. The arrangement of the kitchen and bathrooms in a stack means that they form a vertical thermal core, which can be isolated and heated when
the house is closed in winter, to avoid both frozen pipes and excessive heating bills. Because of such measures, the Tower House uses a third of the energy of a house of comparable size.

With regard to cooling, Peter Gluck is quite adamant that "we don't go to the country to be air-conditioned", and describes how the adaptation of an attic fan system used in traditional American houses was influential in their thinking. Air is heated through the glass in the stair enclosure and, by creating a difference in pressure, air from outside is drawn in through small awning windows or horizontally placed casement windows. At night, either an open hatch at the roof level or a fan positioned under the roofline draws warm air out of the building through the stack effect.

These pleasingly simple solutions at first seem at odds with the construction of the building. While a local workforce was used, it was, according to Peter Gluck, "a very sophisticated house and not an easy house to build". Structurally, the frame is timber and steel, with clear glass for transparency and view, and olive fritted glass, even on the underside of the elevated living room, to create a reflective surface for the play of light and movement. This allows the building to be both a sculptural object and integrated into its natural context.

What Thomas Gluck is keen to point out is the pleasure the house gives him, his family and friends. "It is a playful house, not overly serious, with the sense that everything is turned on its head." He describes kids charging up and down the staircase, friends who arrive in the dead of night and are stunned by the morning view that greets them, gatherings of families who stay in the Bridge House, equidistant between his parents' cottage and the Tower House. He paints a picture of oneness with nature, of calm and retreat from urban life but, even more so, of tremendous fun and conviviality: "It is a building that works on every level. The simplicity of the program and form allows functional things to work well."

And it seems that this combination of functionality and aesthetics is very much at the heart of the practice. In the firm's monograph, The Modern Impulse, Peter Gluck outlines how this notion rests on four analytical attributes: use, structure, context and social effect. When all four are observed, the result is a building that, although conceived from, and for, a specific situation, the architecture would do more than meet its needs: it would enhance human experience and raise the threshold of aesthetic and social imagination. He also acknowledges that it is not always easy. "It is an heroic attempt but also it is fun trying to get them."

When Peter Gluck designed the Bridge House, it was defined by, and named after, a bridge that ostensibly went nowhere but somehow pointed to future opportunity. And when it did manifest in the Tower House, it was with the most marvellous set of balancing and counter-balancing attributes. The building footprint is small, the view expansive, the materials and construction are high-tech, so that the play of nature's light and movement is heightened. There are stairs keeping the occupants active, but also provision for a lift stack should it become necessary. Future planning, it seems, is something of a Gluck specialty.